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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,180	08/18/2005	Don W. Cochran	PSSZ 200074US01	5253
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FAY SHARPE LLP 1228 Euclid Avenue, 5th Floor The Halle Building Cleveland, OH 44115				
EXAMINER				
LUU, THANH X				
ART UNIT		PAPER NUMBER		
2878				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/519,180

Applicant(s)

COCHRAN ET AL.

Examiner

Thanh X. Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7, 9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 9 and 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to amendments and remarks filed February 16, 2010.

Claims 1-4, 7, 9 and 11-18 are currently pending.

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-4, 7, 9 and 11-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
4. It is unclear where Applicant originally discloses an embodiment in which "a receiver aperture positioned to received light of a reflected image field including dark field regions corresponding to the lighting voids generated by the patterned illuminator, wherein the dark field regions illuminate a specular artifact on the part under inspection."
5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 1-4, 7, 9 and 11-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Regarding claims 1-4, 7, 9 and 11-18, it is unclear how a reflected image field including dark field regions that correspond to lighting voids can serve to illuminate. That is, light voids are void of light; it is unclear how it can illuminate anything. Furthermore, the dark field region is reflected and received by the aperture. How can a region received by the aperture, serve to illuminate anything. For examination purposes, Examiner understands the dark field regions to be regions that are underneath blocked illumination from the light source or regions between light sources.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiang (U.S. Patent 6,191,850).

10. Regarding claims 1-3, 12 and 13, Chiang discloses (Figs.) a system for providing patterned illumination fields within an automated visual inspection system, the system comprising: a patterned illuminator comprising light emitting diodes (col. 1, lines 17-18) and at least one masking or blocking element (grid pattern 22) configured to provide spatially-adjacent regions of uniform, diffuse lighting and lighting voids (shadows) to produce engineered illumination fields; a receiver aperture (54) positioned to receive light generated by the patterned illuminator which has scattered or reflected off a part under inspection (44); and a transport mechanism (col. 5, line 66 - col. 6, line 3) used to automatically convey and position parts under inspection within the engineered illumination fields generated by the patterned illuminator. Chiang also discloses (Fig. 3) annular regions; a 2D camera (50); and a processor means (57)

as claimed. The dark regions of the grid correspond to dark field regions claimed. MPEP Sect. 2115 states that material or article worked upon does not limit apparatus claims. Therefore, since the same structure of the system is disclosed the claim is disclosed by the prior art. The type of part under inspection, i.e. a specular artifact, has no patentable weight on the apparatus that performs the inspection.

11. Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Cochran et al. (U.S. Patent 4,882,498), hereinafter, Cochran '498.

12. Regarding claim 16, Cochran '498 disclose (Figs.) a method and a system for providing illuminated fields within an automated visual inspection system, comprising: a patterned illuminator (10; not labeled in Figs. 3 and 4) configured to provide spatially-adjacent regions of uniform, diffuse lighting and lighting voids (areas where LEDs are missing) to produce engineered illumination fields; a receiver aperture (lens of a camera 36) positioned to receive light generated by the patterned illuminator which has scattered or reflected off a part under inspection (20); and a transport mechanism (conveyor) used to automatically convey and position parts under inspection within the engineered illumination fields generated by the patterned illuminator. Cochran '498 also disclose (Figs.) the illuminator comprises a series of ring lights (Fig. 3) having different dimensions and dark field regions formed at areas where the LEDs are missing as claimed. MPEP Sect. 2115 states that material or article worked upon does not limit apparatus claims. Therefore, since the same structure of the system is disclosed the claim is disclosed by the prior art. The type of part under inspection, i.e. specular artifact, has no patentable weight on the apparatus that performs the inspection.

13. Regarding claim 17, as applied above, Cochran '498 discloses the method as claimed. Further, the objects of Cochran '498 (Fig. 2) are three-dimensional and specular.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang in view of Jusoh et al. (U.S. Patent 6,207,946).

16. Regarding claim 7, Chiang discloses the claimed invention as set forth above. Chiang does not disclose pulsing or turning on/off the light source as claimed. However, Jusoh et al. teach (col. 7, lines 20-35) a similar system having strobing LEDs. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide strobing LEDs in the apparatus and method of Chiang to improve inspection throughput as known.

17. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over White (U.S. Patent 6,273,338), hereinafter, White '338 in view of White (U.S. Patent 5,684,530), hereinafter, White '530.

18. Regarding claim 14, White '338 discloses (Figs. 13, 14) a method of illuminating a part under inspection within an automated visual inspection system, the method comprising steps of: positioning a highly specular, three-dimensional part under inspection (2) relative to a patterned illuminator comprising light emitting diodes (LEDs 28) and at least one masking or blocking element (32) wherein illumination fields of the illuminator are selectively activated in an alternating on/off manner (strobed; col. 5, lines 19-20) to produce an engineered illumination pattern; illuminating the part under inspection using the engineered illumination pattern produced by the patterned illuminator; and analyzing light (with processor) generated by the patterned illuminator that has subsequently reflected or scattered off the part under inspection

for the purpose of deducing quality status information related to the part. The area blocked generates a dark field region as claimed. White '338 does not disclose transporting the part. White '530 teaches (Figs.) transporting a part under inspection with a conveyor. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to transport the part as taught in the method of White '338 in view of White '530 to provide automatic inspection as known. MPEP Sect. 2115 states that material or article worked upon does not limit apparatus claims. Therefore, since the same structure of the system is disclosed the claim is disclosed by the prior art. The type of part under inspection, i.e. specular artifact, has no patentable weight on the apparatus that performs the inspection.

Allowable Subject Matter

19. Claims 4, 9, 15 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

20. Applicant's arguments filed February 16, 2010 have been fully considered but they are not persuasive.

21. Applicant asserts that the prior art does not disclose dark field regions illuminate a specular artifact on the part under inspection. Examiner disagrees. It is unclear how the blocked light forming the grid of Chiang is not a dark field region corresponding to the lighting voids as claimed. Similarly, in Cochran '498 the regions where the LEDs create a dark field region as claimed. With respect to the specular artifact, Applicant's remarks do not overcome Sect. 2115 of the MPEP that states that the type of material or object worked upon or inspected does not served to limit a device or system for doing the inspection.

22. Thus, as set forth above, this rejection is proper.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

Art Unit: 2878

would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thanh X Luu/

Primary Examiner, Art Unit 2878